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USER'S GUIDE TO THE FHP2P01

PON Power Meter

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PON Power Meter

General Description:

FHP2P01 PON power meter is a small size, low loss and good quality handed-held optical power meter. It is designed for the testing , installation and maintenance of FTTX PON network , which can be used for APON, BPON, EPON and GPON network. FHP2P01 has two output ports for ONU and OLT/Video, which supports CW/burst upstream detection at 1310nm and downstream signal at 1490/ 1550nm. It can directly show the status of pass , warning or failure by threshold testing . FHP2P01 is the ideal tool for PON setting and maintenance.

Main features:

- Handed-held, Easy-to-carry and use
- P/F testing and normal testing mode
- Two testing ports with " ONU " & " OLT/Video "
- Support 1310nm upstream CW/brust signal and 1490nm /1550nm downstream signal
- Design for networks of APON, BPON,EPON and GPON
- Threshold programmable
- Huge data storage capability
- USB integrated
- Built-in Battery charger
- 2pcs of AAA battery as power supply
- provided Software for communicating with upper-computer

Technical Parameters:

Wavelength	11310nm(Burst)	1310nm (CW)	1490 nm	1550 nm
Linearity	± 0.2@1550 ⩾ −40dBm			
Isolation Rate	>40@1490nm		>40@1310nm	
	>40@1550nm		>30@1550nm	>30@1490nm
Measuring Range (dBm)	-30~+16		-40~+16	-50~+16
Insertion Loss(dB)	1.5			
Spectral Width	1260~1360		1480~1500	1539~1565
Accuracy	0.5db ± 1nW @ 1550 nm			
Threshold	10groups(configure via PC-software)			
Data storage	900			
Accessories adaptors	SC/PC(standard) ST/PC ,FC/PC (Optional)			

Structure

Num.	Description
1	Fiber port
2	display
3	Control panel
4	Battery cover
5	Charger jack
6	USB port

Buttons of this meter have secondary function, normal push to use the function which indicated on the button, hold(>2s)to use the function on the panel, all the functions have been listed as follow:

1	>2s PERM ON OFF	Power button. Hold(>2s)to turn off the function of auto-shut down.
2	P/F	Measuring mode select button. Able to switch between normal measurement and P/F measurement under main mode.During checking threshold setting and saved data it's used to turn page up.
3	>2s SAVE LOAD	Data Storage button. In main mode, Hold(>2s)to storage value of current optical power .use this button to quit during checking threshold.
4	>2s SET REF	In man mode. Short press to view the current value of REF: hold (>2s)to storage current power value as reference value.
5	DELETE dBm/dB	Unit change button. Used to switch between dBm and dB. Hold(>2s)to erase all the storage data..use this button to quit during checking threshold.
6	>2s CW/Burst	Backlight button. to open/close backlight. In main mode Hold(>2s)to swith between 1310CW and 1301Burst .
7	P_{th}	View and select value of threshold, use "P/F" button or "REF" button to page up or page down.

Procedure

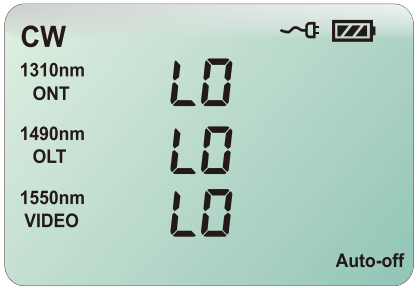
Simple Procedure

1) Connect to the measuring circuit before use;
2) Push power button to enter measuring interface;
3) Push backlight button to turn on or turn off backlight;
4) Hold backlight button to switch between 1310nm CW/burst signal;
5) Push "Pth" button to enter interface of threshold setting and resetting, set threshold by software through USB, push "dBm/dB" button to quit threshold setting interface;
6) Hold "LOAD"button to save current optical power;
7) Measurement finished, Push power button to shut down;

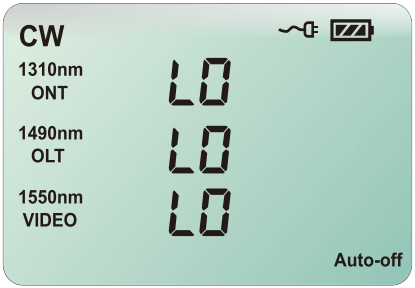
Detailed Procedure

1. Turn on and turn off

Connect power source properly, turn on the meter , after one "beep" meter will turn on and enter measuring interface automatically, showed as the right picture:



Hold this button(>25)will turn off the function of auto-shut down, showed as right picture, otherwise lower right corner will show "Auto-off"icon to mention you in the state of auto-shut down .auto-shut down means if user did nothing in one period of time ,meter will turn off automatically, this value can set by manufacturer, default setting is 10 minutes.
Please turn off the meter by power button after use so as to save power.ve power.



2. Select measuring mode

Default mode is normal measuring mode ,push mode select button "P/F" to switch between normal measuring mode and P/F measuring mode.

Normal measuring mode

Right picture is normal measuring mode. normal measuring mode can measure the optical power directly with no threshold setting. There is two way to show the value of power: with unit of dBm or dB.Two unit could check and switch by "dBm/dB" button .
During measurement of 1310nm (ONT), hold(>2s) to switch between 1310nm (CW/burst) measuring mode.

P/F measuring mode

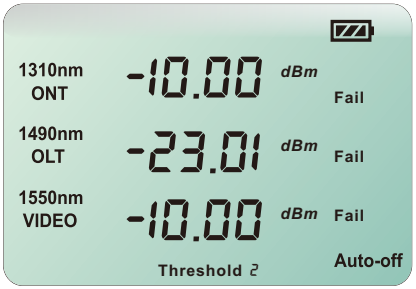
In P/F measuring mode meter will compare the optical power with threshold to judge whether measured power value is meet the requirement of user. Display will show the relevant judge of result :"Pass", "Warning" or "Fail".

3. Threshold setting

User could set threshold , maximum 10 groups

Operate as follow:

In the main interface, check the value of threshold by threshold checking button, left side display 1310nm,1490nm and 1550nm . Middle is the setted threshold, right sider is unit and status. After entering threshold checking mode, continue to push the button to switch and check set point between "Fail", "Warning"and"Pass" separately. Push page up or page down button to check each threshold. The "Threshold"below the display indicate the sequence of threshold value, Threshold 0 is the first group, right picture showed the setting of third threshold value



Note: Threshold setting needs specific software, detailed procedure please check the manual for software, push data storage button or unit switch button to quit this mode after use.

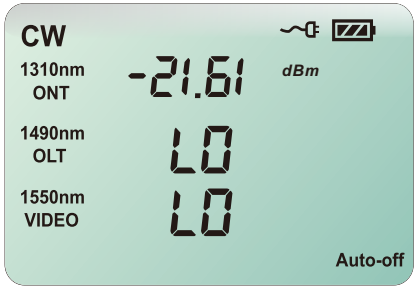
4. Unit conversion

In normal measuring mode, result could displayed with unit of dBm and dB, switch between dBm and dB by "dBm/dB button, then display will indicate relevant unit(dBm or dB),showed as right picture.

"dBm" is the real optical power of the measurement, "dB"is te value of optical power which compared with the REF value, about detail please check "Setting of REF value".

So "dBm" and "dB" are quite different, please pay more attention when reading values.

In the P/F measuring mode ,the same way as normal measuring mode ,they also have "dBm" and "dB" they have the same meaning as that in normal measuring mode.

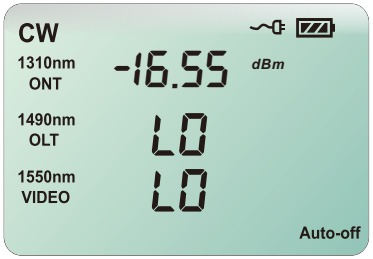


5. Set 1310nm CW/Brust measuring mode

There are 1310nm(ONT) upstream signal and 1490nm downstream(OLT) , 1550nm(Video)signal in the PON network, but 1310nm signal has two kinds of outputting(CW/Burst).

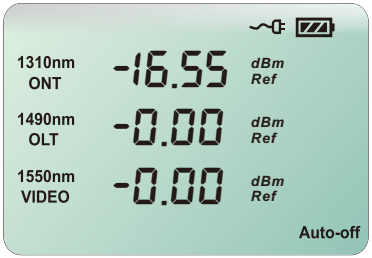
User should hold(>2s) backlight button to switch between 1310nm(CW) and 1310nm(Burst), unit will indicated by "CW" and "Burst" on the display, showed as right pictures

1310nm(CW) is continuous wavelength of 1310nm, 1310nm(Brust) is the Brust wavelength of 1310nm, this kind of signal is invalid during measuring the status of 1490nm and 1550nm wavelength.



6. Setting of REF value

Push REF button to check setted reference value.showed as follow:



If you want to change current optical power as reference value ,please hold(>2s)REF button in the measuring mode, meter will finish this job after one "beep", value on the display is result from the comparison with the reference value(unit is dB).

7. Setting of backlight and guide for battery using

This meter has backlight function ,you could push backlight button to turn on backlight in the environment with insufficient light.

This meter is low power consumption instrument, just need 2*AAA battery for normal use ,but backlight will consume huge power, short the life of battery,so for the saving of power please turn off backlight in the environment with bright lights.

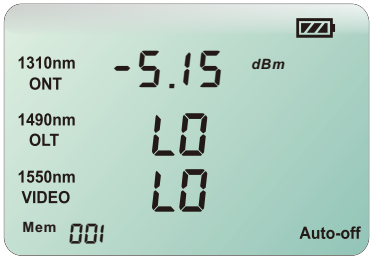
Meter was integrated with charger, it will save your money for battery replacement , green and friendly to the environment, for the safety of operation please use our operational battery and charger.

When charging the battery, the indicator light on the bottom will turn red and flash, it will turn to green after charging has finished.

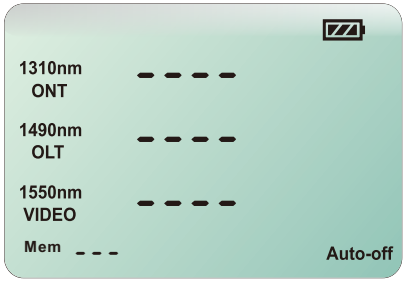
During operating of meter, if the icon at top right corner is rolling, means meter is charging.

8. Data storage function

This meter can storage huge amount of data ,up to 900 groups, in measuring mode hold(>2s) "load" button, then data will be saved after one "beep",right picture is the data of 1310nm (CW) .



Item "Mem 001" at Left bottom means the first group of data, it stand for the sequence of saved data, the value above is the power value for relevant wavelength.
Push "LOAD"button to check saved data, use push page up, page down button could switch to last or next data.
The provided software can read internal data and easy to elaborate by upper-computer, please check software manual for detail.
when storage space is full, hold(>2s) "dBm/dB "button to erase some data in saving check mode. Right picture is the temporary interface during data erasing.
After erasing , meter will go back to main interface automatically.



9. Port connection

This meter is one kind of portable , multi-port instrument , with two optical measuring port at the top ,USB and standard charge jack are at the bottom .

It could measure upstream 1310nm(ONT) by port which marked with "ONT" measure 1490nm(OLT) downstream、1550nm downstream(Video) signal by port which marked with "OLT/Video".

Notice

- Please follow the manual for proper operation.
- This meter is designed for PON network, operator should have the basic knowledge of PON network for better operation of this meter.
- This meter is high precision instrument, please don't use it in terrible environment (high temperature , high humidity ,etc).
- Standard use with AAA battery , When the long period of time when not in use, please take batteries out for not spilling of toxic chemicals.
- Integrated with internal intelligent charger, please use optional rechargeable battery and adapter, manufacturer will take no responsibility for the damage caused by unproper charger or adapter.
- Because of the different condition ,precision of meter will be difference,when external interference is huge, measuring will be disturbed, it's normal phenomenon, restart can slove the most of problems.

Maintenance

- Please shut off and cap protecting cover for fiber port after use then keep it in ventilated and dry place.
- Meter needs matched accessory and adapter for External power to prevent permanent damage.
- Clean fiber connector regularly.
- Please don't disassembly the meter,This may result in permanent damage and loss of guarantee qualification.
- Calibrate once a year to keep the high accuracy of measurement.